

Amendment dated June 6, 2012

After Final Office Action of December 6, 2011

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) A plastic or polymer composite article formed from an immiscible polymer blend comprising 60% or greater of a high density polyethylene (HDPE) matrix phase and 40% or less of a polycarbonate (PC) phase, wherein:

 said PC phase of said immiscible polymer blend consists essentially of fiber-shaped ~~nano~~-domains having a length-wise dimension aligned essentially parallel in said HDPE matrix phase;

 said HDPE has a melt flow at 190°C/2.16 Kg of less than 1g/10 min, and said PC has a melt flow of an injection molding grade PC.

 the ratio of HDPE to PC provides a blend having a modulus greater than the additive contribution of each polymer to overall stiffness and

 the amount of HDPE and the amount of PC when added together equal 100%.

Claims 2 – 11. (Canceled)

Claim 12. (Previously Presented) The composite article of claim 1, which is formed into the shape of lumber.

Claim 13. (Previously Presented) The composite article of claim 1, which is a railroad tie.

Claim 14. (Previously Presented) The composite article of claim 1, which is a marine piling.

Claim 15. (Currently Amended) A method of making a plastic or polymer composite article, comprising:

 (a) preparing an immiscible polymer blend comprising 60% or greater high density polyethylene (HDPE) and 40% or less polycarbonate (PC), wherein said HDPE has a melt flow at 190°C/2.16 Kg of less than 1g/10 min, and said PC of an injection molding grade PC, and wherein the ratio of HDPE to PC provides a blend having a modulus greater than the additive

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contribution of each polymer to overall stiffness and wherein the amount of HDPE and the amount of PC when added together equal 100%; and

(b) ~~shaping the blend into a desired shape of the article;~~

~~wherein said shaping step comprises a step of extruding said polymer blend into a mold so that the PC phase of said immiscible polymer blend consists essentially of fiber-shaped domains having a length-wise dimension aligned essentially parallel in said HDPE matrix phase.~~

Claim 16. (Currently Amended) The method of claim 15 wherein ~~at least one of said preparing step comprises and shaping steps comprise~~ a step of continuous extrusion of said polymer blend.

Claim 17. (Previously Presented) The method of claim 15 wherein said preparing step comprises a step of extruding said polymer blend.

Claim 18. (Canceled) ~~The method of claim 15 wherein said shaping step further comprises the step of molding said extruded polymer blend.~~

Claim 19. (Previously Presented) The method of claim 15 wherein said molding step comprises injection molding.

Claim 20. (Previously Presented) The polymer blend of claim 1, wherein at least one of said HDPE or PC is recycled.

Claim 21. (Canceled)

Claim 22. (Previously Presented) The method of claim 15, wherein at least one of said HDPE or PC is recycled.

Claim 23. (Canceled)

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Claim 24. (Currently Amended) A plastic or polymer composite article formed from an immiscible polymer blend consisting essentially of a high density polyethylene (HDPE) matrix phase and a polycarbonate (PC) phase distributed in said matrix phase, wherein:

 said PC phase of said immiscible polymer blend consists essentially of fiber-shaped ~~nan~~-domains having a length-wise dimension aligned essentially parallel in said HDPE matrix phase;

 said HDPE has a melt flow at 190°C/2.16 Kg of less than 1g/10 min,

 said PC has the melt flow of injection molding grade PC, and

 the ratio of HDPE to PC provides a blend having a modulus greater than the additive contribution of each polymer to overall stiffness.

Claim 25. (Previously Presented) The composite article of claim 1 wherein
said PC has a melt flow greater than 1.